

REMARKS

Please cancel claims 2 and 12 without prejudice. Claims 1, 3-11 and 13-27 are pending. Claims 1, 4, 11 and 13-16 are amended. No new matter is added as a result of the claim amendments. Support for the claim amendments can be found at least in Figures 5-8 and 11-14.

112 Rejections

According to the Office Action, claims 13-16 are rejected under 35 U.S.C. § 112, first paragraph. Claims 13-16 are amended herein and, as such, satisfy the requirements of 35 U.S.C. § 112.

103 Rejections

Claims 1-8 and 10-19

According to the Office Action, claims 1, 3-8, 10-11 and 13-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Carobolante (U.S. Patent No. 6,084,378) in view of Alfrey (U.S. Patent Application Publication No. 2003/0103364), and further in view of Gay (U.S. Patent No. 6,791,390). Applicants have reviewed the cited references and respectfully submit that the embodiments of the present invention set forth in claims 1, 3-8, 10-11 and 13-27 are neither anticipated nor rendered obvious by Carobolante, Alfrey and Gay, alone or in combination.

Applicants respectfully submit that Carobolante does not show or suggest “a plurality of power switches ...; [and] a plurality of power switch driving circuits for

controlling switching states of said plurality of power switches respectively and for selectively coupling at least one power switch of said plurality of power switches to a PWM (pulse width modulation) signal so as to enable a PWM powering mode, said power switch driving circuits comprising a first switch driving circuit comprising: a first switch that couples and decouples a first current source from said load; a second switch coupled in parallel with said first switch and that couples and decouples a first power switch to Vcc; a third switch coupled in parallel with said second switch and that couples and decouples said first power switch to said PWM signal; a fourth switch coupled in parallel with said first switch and that couples and decouples a second power switch to ground; and a fifth power switch coupled in parallel with said fourth switch and that couples and decouples said second power switch to said PWM signal” as recited in independent claim 1 (emphasis added) and as similarly recited in independent claim 11.

According to Carobolante, driving transistors in an H-bridge circuit are selectively energized. However, Applicants respectfully submit that Carobolante does not show or suggest first, second, third, fourth and fifth switches in a power switch driving circuit as recited in claims 1 and 11, nor does Carobolante show or suggest the claimed elements arranged as in claims 1 and 11.

Furthermore, Applicants respectfully submit that Carobolante does not show or suggest “four power switches forming an H-Bridge circuit coupled to a load and for selectively transferring power to said load, wherein each power switch of said plurality of power switches is either fully on or fully off; [and] a plurality of power switch driving

circuits operable for controlling switching states of said four power switches respectively and for selectively and concurrently coupling at least two power switches of said four power switches to a PWM (pulse width modulation) signal to enable a PWM powering mode” as recited in independent claim 4 (emphasis added).

Carobolante mentions driving a coil with a PWM current and applying a PWM gate voltage signal to the gate of appropriate driving transistors. However, Applicants respectfully submit that Carobolante does not show or suggest concurrently coupling a particular number of power switches (specifically, two power switches) to a PWM signal as recited in claim 4.

Applicants submit that Alfrey and Gay do not overcome the shortcomings of Carobolante. That is, Applicants respectfully submit that Alfrey and Gay, alone or in combination with Carobolante, do not show or suggest the specific limitations of claims 1, 4 and 11 cited above.

Therefore, Applicants respectfully submit that claims 1, 4 and 11 are allowable. Each of the claims 3, 7-8, 10 and 17-21 includes all of the limitations of independent claim 1 plus additional limitations. Each of the claims 5-6 and 22-23 includes all of the limitations of independent claim 4 plus additional limitations. Each of the claims 13-16 and 24-27 includes all of the limitations of independent claim 11 plus additional limitations. Applicants respectfully submit that Carobolante, Alfrey and Gay do not show or suggest the limitations of claims 3, 5-8, 10 and 13-27 in combination with the

limitations of their respective base claims. Furthermore, Applicants respectfully submit that claims 3, 5-8, 10 and 13-27 are in condition for allowance as depending from allowable claims.

Therefore, Applicants respectfully submit that the basis for rejecting claims 1, 3-8, 10-11 and 13-27 under 35 U.S.C. § 103(a) is traversed.

Claim 9

According to the Office Action, claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Carbolante in view of Alfrey, further in view of Walter (U.S. Patent Application Publication No. 2003/0155813). Applicants have reviewed the cited references, and respectfully submit that the embodiments of the claimed invention set forth in claim 9 are neither anticipated nor rendered obvious by Carbolante, Alfrey and Walter, alone or in combination.

As presented above, Carbolante and Alfrey, alone or in combination, fail to teach or suggest each limitation of independent claim 1, from which claim 9 depends. Furthermore, Walter fails to teach or suggest a modification of Carbolante and Alfrey that would remedy the deficiencies of Carbolante and Alfrey. That is, Applicants respectfully submit that Walter, alone or in combination with Carbolante and Alfrey, does not show or suggest the specific limitations of claim 1 cited above.

As such, Applicants respectfully submit that Carbolante, Alfrey and Walter do

not show or suggest the limitations of claim 9 in combination with the limitations of claim 1, and that claim 9 is in condition for allowance as depending from an allowable claim.

Therefore, Applicants respectfully submit that the basis for rejecting claim 9 under 35 U.S.C. § 103(a) is traversed.

Conclusions

In light of the foregoing remarks, Applicants respectfully submit that the pending claims are in condition for allowance. Applicants respectfully request reconsideration of the application and allowance of the pending claims.

The Examiner is urged to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present application.

Please charge any additional fees or apply any credits to our PTO deposit account number: 50-4160.

Respectfully submitted,
MURABITO HAO & BARNES L.L.P.

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